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Washington, D.C. 20505

DIRECTORATE OF INTELLIGENCE

14 FEB 1985

MEMORANDUM FOR: The Honorable Frederick C. Ikle
Under Secretary for Policy
Department of Defense

FROM: [redacted] 25X1
Director of Global Issues

SUBJECT: The New European Fighter Aircraft:
Program Perspective [redacted] 25X1

1. In response to your interest in the European fighter aircraft co-development program (EFA), I have enclosed our assessment of the likely outcome of next month's ministerial meeting in Rome. I hope this analysis will be of assistance in clarifying the motivations for developing a new "all-European" fighter. [redacted] 25X1

2. If you would like further information on this topic, please contact [redacted] 25X1

[redacted] 25X1

Attachment:
The New European Fighter Aircraft: Program Perspective [redacted] 25X1
GI M 85-10045 February 1985 [redacted] 25X1

[redacted] 25X1

[redacted] 25X1

[redacted] 25X1

[redacted] 25X1

SUBJECT: The New European Fighter Aircraft: Program Perspective

OGI/CTID/IA [redacted] 25X1

Distribution:
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1 - NIO/Economics
1 - NIO/General Purpose Forces
1 - D/EURA
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The New European Fighter Aircraft: Program Perspective

Summary

Senior defense officials from France, Great Britain, West Germany, Italy and Spain are scheduled to meet in Rome next month to decide the fate of the multi-billion dollar European Fighter Aircraft co-development program. Earlier sessions have set the stage for a showdown between British and French factions over program leadership and engine selection. We believe that some accomodation will be reached as political commitments are too deep to allow the joint venture to fail at this juncture. In addition, strong sentiment against substantial US participation in EFA is helping to keep the partnership intact. [redacted] 25X1

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This memorandum was prepared by [redacted] 25X1
Industry Analysis Branch and by [redacted] and
[redacted] Arms Transfer Branch, Office of Global 25X1
Issues. Comments may be directed to [redacted], Chief,
Civil Technology and Industry division, on [redacted] 25X1

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GI M 85-10045

[redacted] 25X1

[redacted] 25X1

The New European Fighter Aircraft: Program Perspective

The Program

The European Fighter Aircraft (EFA) is a five nation program to design and produce an all European fighter/strike aircraft for the mid-1990s. Even though many of the details have not been worked out, we expect an advanced aircraft will be built by the consortium with the airframe, engine, and avionics based almost exclusively on European technology. The new fighter is intended to replace aging inventories of US F104s and F4s, French Mirage F1s, and British Jaguars. The partners project procurement of some 800 aircraft for their own forces, and are hopeful that export versions will sell well in the Third World. 25X1

Motives

The five nation EFA grouping was drawn together because of the enormous cost, risk, and limited market associated with modern fighter aircraft. These factors are driving new aircraft designs increasingly beyond the technical and financial reach of individual European countries. Backers of the program believe that it will help close current technology gaps in key defense areas and also promote industry stability. 25X1

Italy's Aeritalia, for example, sees EFA as a 25X1
means to acquire technology on composite materials. 25X1

The Europeans cite a number of key political and economic reasons for embracing EFA. On the political front, the project would allow member governments to claim an important contribution to NATO solidarity and defense cooperation. It also would enable the European industry to avoid being labeled as merely an 25X1

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assembler of US weapons sytems.

Heightened sensitivities and concern over US leadership of advanced weapons development, moreover, is helping to unify government and industry support for increased intra-European defense cooperation.

Although EFA participants feel that the ability to spread costs and risks is a major argument for the program, they also believe that EFA will maintain domestic employment as well as increase the technical proficiency of European aerospace manufactures. France's primary military aircraft builder, Dassault, will near completion of its main fighter production line (Mirage 2000) by the early 1990s, while the Panavia partners (Britain, West Germany, and Italy) will have completed the Tornado program as well (See Table 1). While refits and special orders will provide some cushion, the absence of new programs could mean a disbanding of design teams and layoffs of assembly line workers. Indeed, the impact of lower production levels is already being felt:

- In early 1984, Aerospatiale announced that it was reducing production of sub-assemblies for the F1 and Jaguar fighters.

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- West Germany's Messerschmitt-Boelkow-Blohm announced that its 40,000 man work force will be cut ten percent over the next four years as the Tornado program winds down.
- Dornier is reducing its work force as West German participation in the Alpha Jet program comes to a close.

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European leaders fear that job and technology gains would be limited by US participation in EFA. Consequently, the option of buying or co-producting an advanced US fighter was killed at the last ministerial meeting, even though there was near unanimous agreement that the EFA would be more costly and not as technologically sophisticated as a new US design.

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the Europeans believe that such benefits are outweighted by the stringent US technology transfer and export restrictions, as well as the perceived stigma attached to buying a US aircraft.

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We see a growing consensus that the EFA is the only realistic option for a new European fighter. While Britain's Experimental Aircraft Program (EAP) and the French ACX project are both pushing European fighter technology frontiers, neither government wants to commit the resources required for full scale production of a national fighter. The United Kingdom, faced with a declining defense budget that must accommodate such high-cost programs , is seriously questioning it ability to add a multi-billion dollar fighter program to its hardware list. that both the Minister of Defense and British Aerospace officials see a

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national fighter program only as a last resort, and they are skeptical that British industry could develop a satisfactory and affordable fighter plane. Similarly, disappointing export sales of the French Mirage 2000 have left Dassault without the financial resources to develop another high performance aircraft, a stituation recognized publically by French Defense Minister Hernu. In addition, [redacted] findings show that the export outlook will remain poor--the demand for fighters is likely to drop by 40 percent in the next 10 years*. [redacted] 25X1 25X1

Major Problems Remain

Despite the strong political and economic motivations driving the program, EFA still faces major hurdles. Attache and press reports, nevertheless, indicate that a preliminary consensus has been reached on a number of basic program decisions:

- o Mission: High performance air superiority fighter capable of ground attack.
- o Design: Single seat, twin engine, delta/canard wing, modular construction, 9.5 ton weight range, fly-by-wire controls, lookdown-shootdown radar, low observable.
- o Initial Operational Capability: 1995
- o Orders: 200-250 each for UK, France, West Germany, 100-200 for Italy and 100-150 for Spain.

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- Production share: UK, France, West Germany -25 percent each; Italy-15 percent; Spain-10 percent.

The basic issues of overall program leadership and the selection of a propulsion system are at the top of next month's ministerial agenda.

Program Leadership: Selection of a program leader is central to settling related problems of final design parameters, work distribution, and funding. British Aerospace and Dassault both claim superior expertise in airframe manufacturing technology. The French, however, are demanding a dominant role in the program (40 percent) based on Dassault's acknowledged leadership within Europe as a builder and exporter of fighters and its extensive delta-wing design experience. US officials in London reported this week that the French and UK positions on leadership remain far apart. [redacted] British Aerospace officials believe their experience in managing the three-nation Panavia consortium qualifies them to spearhead EFA. A Panavia-type arrangement, however, is strongly opposed by other participants, particularly the West Germans. [redacted] [redacted] gross mismanagement by Panavia has been cited as a major factor behind Tornado's cost overruns and its more than $40 million price tag. [redacted]

Based on the positive outcome of the last ministerial meeting and recent country official comments, we believe that a balanced work distribution will be worked out at the March meeting. Embassy reports indicate that the production share

[redacted]

arrangement agreed to at the July meeting in Madrid giving equal shares to the UK, France, and West Germany will help settle the problem. Observers suggest that French direction of the airframe group and British lead on the engine and some components could be one way out of the leadership dilema. 25X1

Engine Selection: Four main engine candidates are being considered by the consortium. All could deliver adequate thrust; they differ only in levels of technology. According to open sources, the RB199--currently used in the Tornado--incorporates technology of the late 1960s. The GE F404 used in the F18 and SNECMA's M88 are based on mid-1970s thechnology. SNECMA claims that improvements to its M88 engine will make it competitive with engines offered in the 1990s. Officials of Rolls Royce state that their XG40 engine incorporates mid-1980s technology and materials; demonstrator testing is planned in 1986. 25X1

We believe that the British and French could reach a compromise on engine selection, possibly by electing to form a separate EFA propulsion consortium that uses technologies derived from both the M88 and XG40.

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There is ample precedent for such an arrangement in both military and commercial jet engine development; Rolls Royce and SNECMA cooperated in designing and producing the engines powering the Concord SST, and the RB199 is built by MTU and Rolls. Moreover, there is still time for Rolls Royce and SNECMA to carry out individual demonstration of their

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XG40 and M88 prototypes, while working out a joint plan on EFA.

Based on our analysis of the technical strengths of the participating engine manufactures and their past cooperative projects, we believe the division of effort could take the following form:

Rolls Royce	(30-40 percent):	Engine core, including the high pressure spool, compressor, and hot section.
SNECMA	(30-40 percent):	Low pressure compressor and the full-authority electronic controls.
MTU	(15 percent):	Low pressure turbine and augmentor (after burner).
Fiat	(5 percent):	Gear Box.

Other Problems The sheer size of the program will complicate the design and production process. EFA currently involves six airframe manufactures, four engine producers, and a host of electronics and components firms (See Table 2). Overseeing industry are the five defense and finance ministries, in addition to the national air forces of each country. Conflicts between and among all groupings are likely to grow as

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the program matures. 25X1

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. In addition, the British Ministry of Defense is 25X1 pushing for an upgraded RB199 engine to power EFA in part because they would use this power plant to re-engine the Tornado. At the same time, press reports indicate that Rolls Royce prefers to develop an entirely new propulsion system. 25X1

Another source of friction is the disparate arms export policies of the member nations. Attache reports indicate that Dassault officials are insisting that France receive a large proportion of any export revenues arising from the EFA because of French experience in managing export sales. Another sticking point may be West Germany's restrictive arms export policy. Within the Panavia consortium, for example, Bonn has maintained the right to veto Tornado aircraft sales. 25X1

A Role for the US?

Even with the goal of an all European-produced fighter, there should be limited opportunities for US manufacturers. Given the close relationship of many US defense firms with their European counterparts, there is likely to be US penetration of the EFA program, especially at the sub-contractor and vendor levels. For example, an Italian electronics firm expected to be a major subcontractor on EFA is 88 percent US owned. Such US access should increase once the EFA program gets underway, despite consortium efforts to minimize such participation. 25X1

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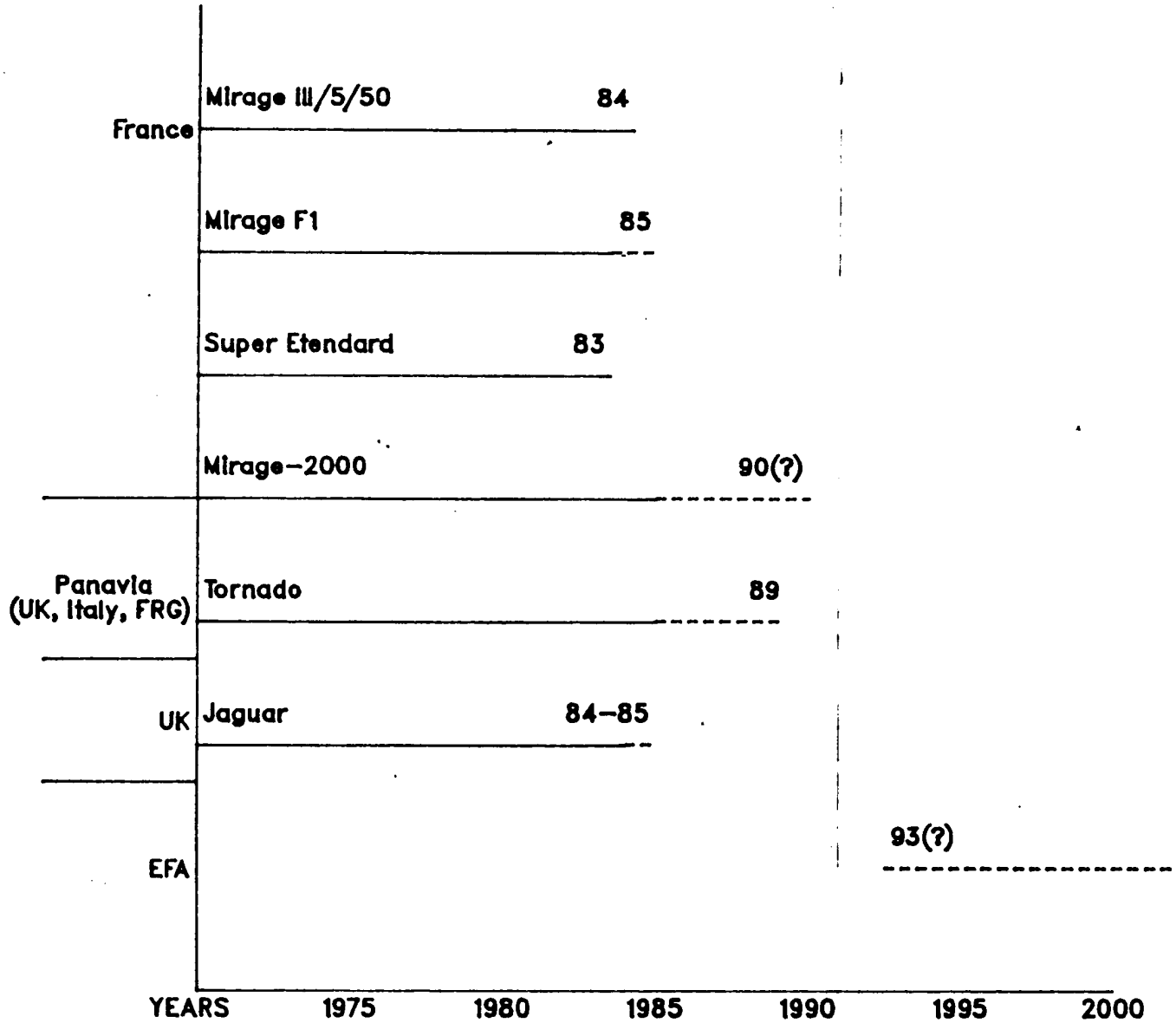
Table 1

European Supersonic Aircraft Production
(with year production is projected to end)



– – – Projected (given current domestic and export orders).

– – – Assumes production start in 1993 for 1995 IOC.

TABLE 2:

PRINCIPAL EFA PARTICIPANTS

	AIRFRAMES	ENGINES	AVIONICS
WEST GERMANY	MESSERSCHMITT, BOELKOW, AND BLOHM; DORNIER	MOTOR TURBO UNION	SIEMENS, RHODE UND SCHWARZ, AEG TELEFUNKEN
FRANCE	DASSAULT	SNECMA	THOMSON-CSF, MATRA
UNITED KINGDOM	BRITISH AEROSPACE	ROLLS ROYCE	MARCONI, PLESSEY, FERRANTI
ITALY	AERITALIA	FIAT	
SPAIN	CASA		

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1 - C/CTID
1 - C/ISID/AT
1 - C/CTID/IA
1 - [redacted] 25X1
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